Supplement of "Improving Runoff Simulation in the Western United States with Noah-MP and VIC"

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Table S1. Features considered for regionalization of calibrated parameters to ungauged basins in VIC and Noah-MP models.

Features in order of rank for VIC	Features in order of rank for Noah-MP
Longitude Centroid	Latitude Centroid
Latitude Centroid	Longitude Centroid
Max Elevation	Area
Precipitation Fall Mean	**KGE stops increasing for below features**
Temperature Fall Mean	Temperature Summer Mean
KGE stops increasing for below features	Min Elevation
Mean Elevation	Precipitation Annual Mean
Min Elevation	Precipitation Fall Mean
Temperature Summer Mean	Perimeter
Precipitation Spring Mean	Temperature Spring Mean
Precipitation Winter Mean	Max Elevation
Precipitation Summer Mean	Precipitation Winter Mean
Precipitation Annual Mean	Temperature Winter Mean
Mean Annual Max 1-D Precipitation	Temperature Annual Mean
Temperature Winter Mean	Precipitation Spring Mean
Temperature Spring Mean	Precipitation Summer Mean
Temperature Annual Mean	Mean Elevation
Perimeter	Temperature Fall Mean
Area	Mean Annual Max 1-D Precipitation
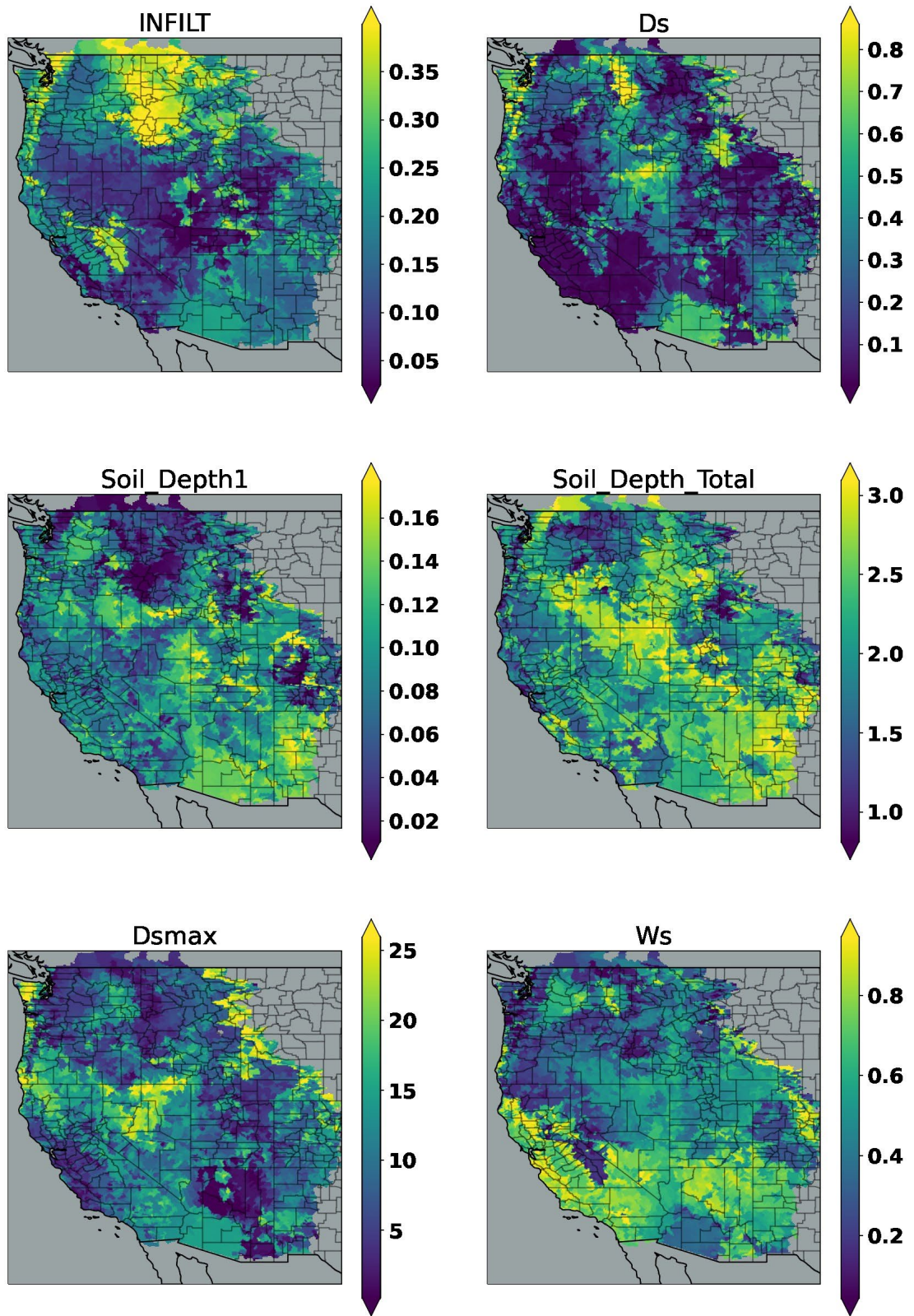
Figure S1. Regionalized VIC land surface parameters over WUS.
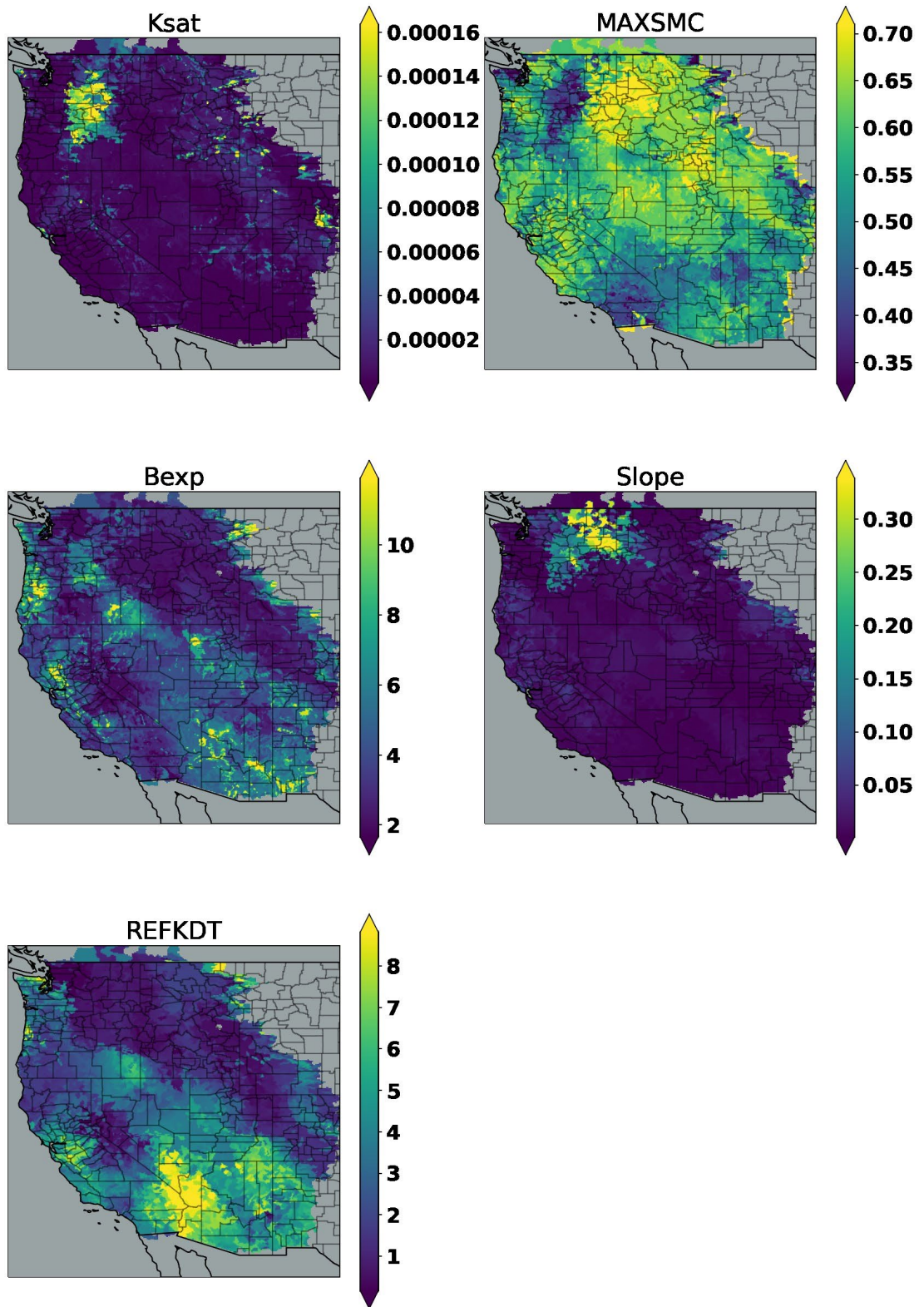
Figure S2. Regionalized Noah-MP land surface parameters over WUS.
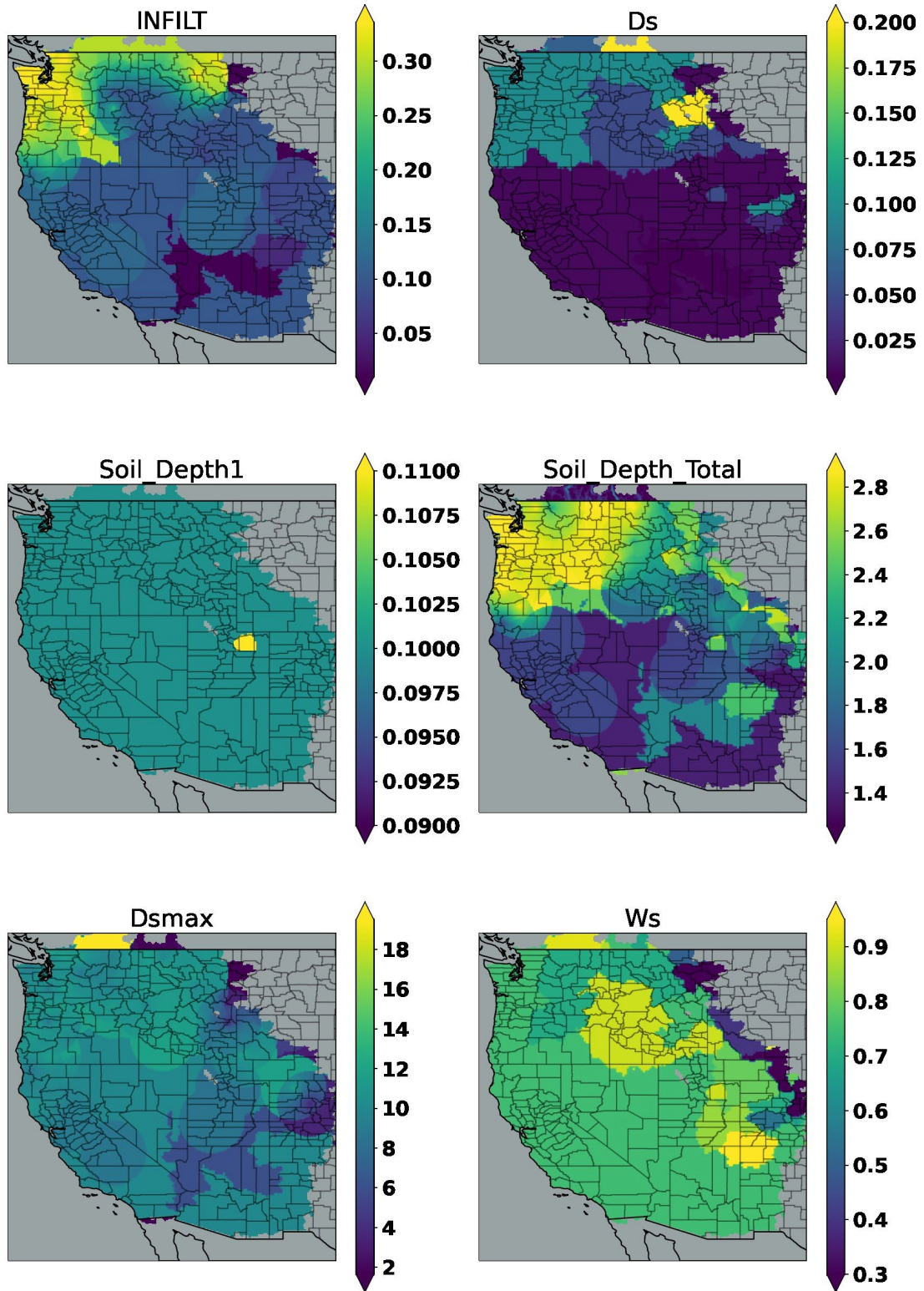
Figure S3. Baseline VIC land surface parameters over WUS.
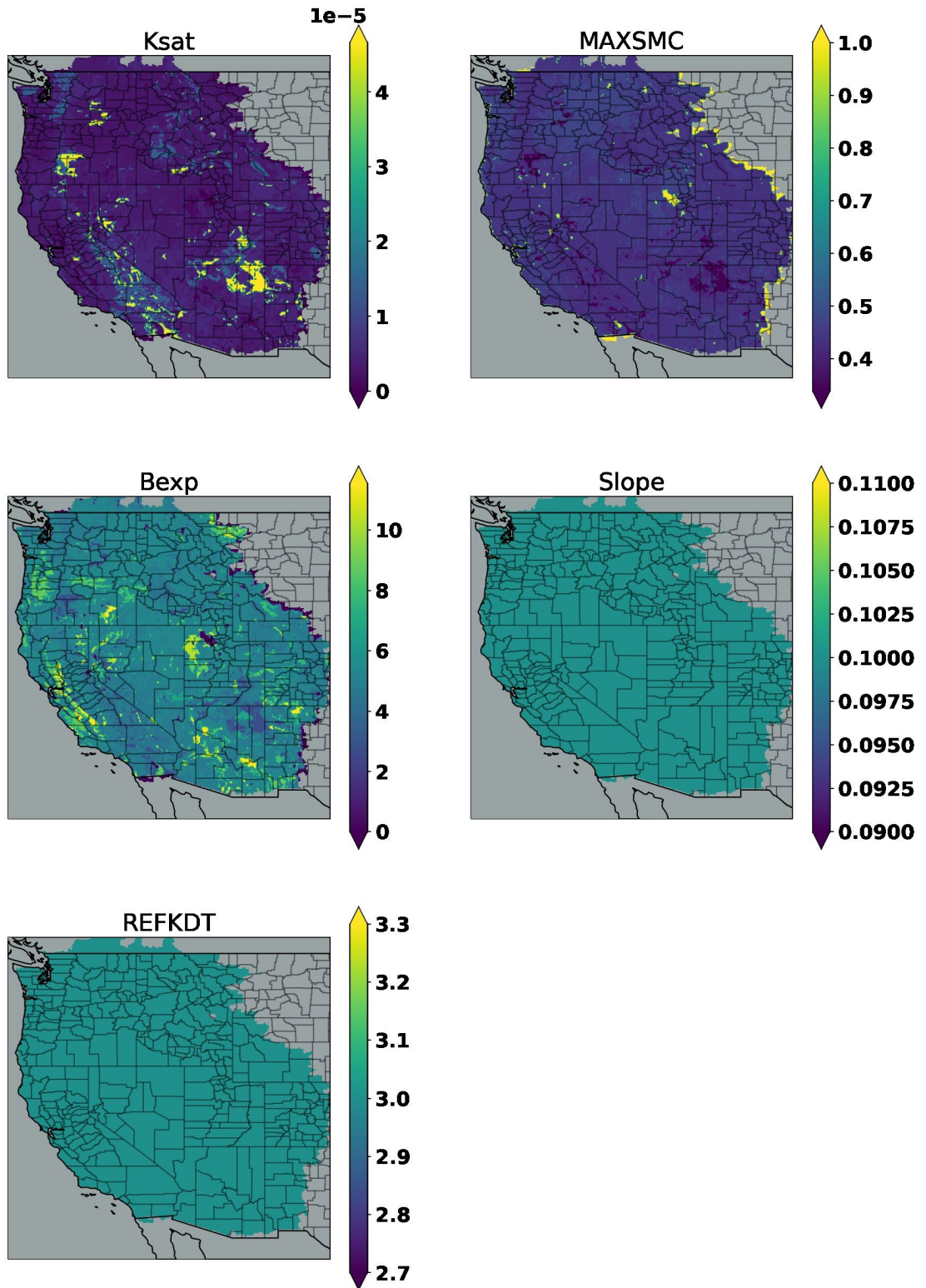
Figure S4. Baseline Noah-MP land surface parameters over WUS.